Development and evaluation of a CAI course in *Information Technology for Life* at Nakhon Pathom Rajabhat University, Thailand.

Somporn Sirisawad B.Ed., LL.B., M.S. (Science).

Faculty of Science

University of Technology Sydney

Australia

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Certificate

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that this thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

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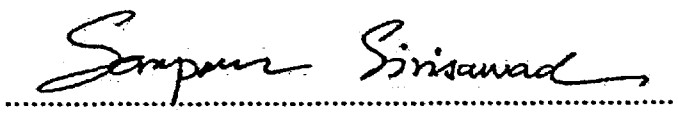

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Abstract

The purpose of this study was to determine whether computer assisted instruction (CAI) in the *Information Technology for Life* course taken by first year students at Nakhon Pathom Rajabhat University (NPRU), Thailand, could be used to teach at least as effectively as traditional methods. Since CAI has been used successfully in developed countries to supplement or replace traditional methods of instruction, it was thought that CAI may present a solution to the lack of instructors in general education courses across the 41 Rajabhat Universities in Thailand. CAI could also facilitate student centred learning, a key goal of the National Education Act (1999).

One hundred and twenty four incoming freshman students enrolled at NPRU for the 2004 academic year participated in a study comparing the two methods of instruction using three topics of the *Information Technology for Life* course. The research questions examined were (1) are there differences between the groups on the achievement factors related to CAI usage? and (2) are there differences between the groups on attitude factors related to CAI and traditional teaching? CAI lessons were developed for the experimental group as interactive multimedia modules loaded from a CD-ROM; the control group received traditional lecture instruction.

Pre-test and post-test scores indicated greater learning gains in the CAI group. Comparison of weak, average and strong students between the two groups showed no difference in learning outcomes for the weak students, but average and strong students in the CAI group did better than those of the control group. The results also indicated that CAI students' retention of content was better than that of students following traditional learning. There was no significant difference in students' attitudes toward their method of teaching. Students of both groups felt that overall their method of teaching was very good. No relationship was found between student performance and their attitude toward CAI.